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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/676,315

10/01/2003

Keiji Hayashi

1324.68392

8188

7590

02/13/2008

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EXAMINER

PAYNE, SHARON E

ART UNIT

PAPER NUMBER

2875

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/676,315	<b>Applicant(s)</b> HAYASHI ET AL.	
	<b>Examiner</b> Sharon E. Payne	<b>Art Unit</b> 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-11, 13-15 and 55-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11, 13, 14, 56 and 57 is/are allowed.
- 6) ☒ Claim(s) 15 and 55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuki (JP 10-1091079) in view of Levy (U.S. Patent 2,530,204) and Kurokawa (JP 56106360).

Regarding claim 15, Kazuki discloses a housing (Fig. 5), and an optical waveguide (4) guiding the light from the light source and emitting light through a light emitting surface (Fig. 1A). Kazuki does not disclose a cold cathode tube with phosphor dispersed throughout the inner and outer surfaces.

Levy discloses a light source (Fig. 2) having a cold-cathode tube (column 11, lines 70-75) with a phosphor (column 3, lines 37-47) dispersed between opposing inner and outer cylindrical diameters that form a wall of the tube (Fig. 2, see reference number 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Levy in the apparatus of Kazuki to provide a lamp assembly with "high efficiency" (column 1, lines 20-25, of Levy).

Kurokawa discloses the phosphor being dispersed throughout between inner and outer surfaces of the wall of the tube (English abstract, Figs. 3-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Kurokawa in the apparatus of Kazuki to make the light from the source brighter (English abstract of Kurokawa).

Concerning claim 55, Kazuki does not disclose the phosphor being dispersed in a cylinder wall of the cold-cathode tube.

Levy discloses the phosphor (column 3, lines 35-47, reference number 3) being dispersed in a cylinder wall of the cold-cathode tube (Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Levy in the apparatus of Kazuki to provide a lamp assembly with "high efficiency" (column 1, lines 20-25, of Levy).

### ***Allowable Subject Matter***

3. Claims 9-11, 13-14 and 56-57 are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose a lamp system with the following features:

1) wherein the reflective surface includes at least three adjacent concaved curve segments, with each of the adjacent concaved curve segments having a curvature center and a constant radius, with the constant radius of at least one of the

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concaved curve segments being different from the constant radius of at least one other concaved curve segment as recited in claim 9; and

2) a lighting unit with a second optical waveguide disposed in the space between the cold-cathode tube and the reflector and having two ends that both face an end of the first optical waveguide as recited in claim 13.

### ***Response to Arguments***

5. Applicant's arguments, see amendment, filed 12/3/07, with respect to the rejection(s) of claim(s) 9-11, 15 and 55 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kazuki, Levy and Kurokawa as described above for claims 15 and 55.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sharon E. Payne/  
Primary Examiner, Art Unit 2875